

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

**Joint Meeting of the RID Safety Committee and the
Working Party on the Transport of Dangerous Goods**

(Geneva, 13 - 23 September 2005, agenda item 3)

Standards

Comments on Standards listed for discussion at the Standards Working Group

Transmitted by the Government of the United Kingdom

The United Kingdom has looked in detail at the standards listed below as candidates for inclusion into Chapter 6 of RID/ADR and offers the following comments for discussion within the Standards Working Group during the September 2005 Joint Meeting.

EN1439

4.1 3rd paragraph also Annex C and all references to Annex C. The UK believes that this text should be excluded from RID/ADR, as these cylinder types are not approved.

4.2 (e) The UK do not agree with this statement and it has no scientific grounding. The whole of the external surface of the cylinder must be inspected.

5 para 4 – The UK does not agree that this is safe practice and it should not be included in this standard. Valve removal should be dealt with in the periodic examination standard.

6.3 The UK does agree that the standard gives sufficient detail to ensure that cylinders are not overfilled.

7.2 As soon as reasonably practicable is not definite enough in a standard. Overfill can quickly lead to overstress and burst. The degree of overfill will determine how quickly the filler must react and the UK believes that this should be reflected in the text.

prEN 14795

5.2 The UK considers that the text does not give sufficient information on the lighting levels to be achieved. 6.2.1.6 of ADR requires External Examination and the UK believes this cannot be carried out in poor lighting.

5.3.1 (b) talks about blocked or inoperative valves. But there is no test to show if valves are blocked or not - all other industrial gas standards include a puffer test. This is a safety issue and the UK believes that the Standards WG should not be approving any standards that are not safe.

5.3.2 The UK considers that the text does not give sufficient information on the lighting levels to be achieved. 6.2.1.6 of ADR requires Internal Examination and the UK believes that this cannot be carried out in poor lighting.

5.4.2.4 (d) The UK is not clear where the 95% of general membrane stress come from. ADR 6.2.3 calls for a maximum stress of 77% of yield. At 95% of membrane stress geometric features will yield and be damaged by the test. The UK believes that cylinders must not be subject to any over pressure, if they are accidentally overpressurised then they can no longer be used and must be scrapped. The UK suggests that the standard revert to the previously agreed wording in EN1440.1996

5.4.2.4 (e) The UK considers the wording to be very weak and it does not ensure any minimum hold time for the test – the UK suggests that the text reverts to the minimum of 30 seconds required by TC23 standards.

5.4.2.4 Note – The UK notes that repair by welding is not allowed by 4.1.6.11 of ADR and this note should be removed.

5.4.3 The UK notes that the text contains no warnings about the dangers of pneumatic testing and the need to get the agreement required by Note 1 of ADR 6.2.1.6.1.

6.1 - the wording implies that the valve may not be removed for periodic test - ADR requires internal examination so the UK believes that the valve will always be removed.

6.2 – The UK is not clear why is there no requirement to use a thread gauge to check these threads?

prEN1440 (Rev)

4 – The UK believes that there is a need to change sentence starting 'An interval of 10 years' to 'an interval of 10 years shall apply if any of the conditions in annex A are not met or if the Competent Authority has not given agreement to an extended period'.

Same comments as for prEN14795 re lighting levels for inspection.

5.1 The UK notes that the text does not specify the need for an internal examination as required by 6.2.1.6 of ADR.

5.3.1 talks about blocked or inoperative valves. But there is no test to show if valves are blocked or not - all other industrial gas standards include a puffer test. This is a safety issue and the UK believes that the Standards WG should not be approving any standards that are not safe.

5.3.2.4 (d) The UK is not clear where the 95% of general membrane stress comes from. ADR 6.2.3 calls for a maximum stress of 77% of yield. At 95% of membrane stress geometric features will yield and be damaged by the test. The UK believes that cylinders must not be subject to any over pressure, if they are accidentally then they can no longer be used and must be scrapped. The UK suggests that the text reverts to the previously agreed wording in EN1440.1996.

5.3.2.4 (e) The UK believes that the wording is very weak and does not ensure any minimum hold time for the test – the UK suggests that the text reverts to the minimum of 30 seconds required by TC23 standards.

5.3.2.4 Note – The UK notes that repairs by welding is not allowed by 4.1.6.11 of ADR and this note should be remove

5.3.4 The UK notes that the text contains no warnings about the dangers of pneumatic testing and the need to get the agreement of the Competent Authority as required by Note 1 of ADR 6.2.1.6.1.

5.4 The UK notes that this text does not meet the requirements of ADR 6.2.1.6 for an external examination and this proposal was rejected when submitted on an earlier AEGPL paper.

6.1 - the wording implies that the valve may not be removed for periodic test - ADR requires internal examination so the UK believes that the valve will always be removed.

6.2 – The UK is unclear as to why there is no requirement to use a thread gauge to check these threads?

7.1 The UK considers that the drying of cylinders is very important and is not clear why insufficient guidance is given in this draft standard on the drying of cylinders.

The UK considers that Annex B should not be included, as the Joint Meeting has already rejected it.

prEN14767

4 - Note – The UK considers the text to be invalid, as it does not meet the requirements of table P200 where the Competent Authority sets the periodicity.

5.1 – The UK do not agree that for transparent cylinders the internal examination can be made from the outside. The casing will mask some of the surfaces and defects may easily be missed. The UK believes that internal examination in ADR 6.2.1.6 means looking inside the cylinder.

5.2.2 requires the entire surface to be inspected – the UK agrees - but the UK can not see how will this be done if the cylinder is held in its cage – the UK believes that the cage must be removed and this should be made clear in the text.

5.2.3 The UK considers this to be for inspections at time of fill and is not clear why it is included in this draft standard?

5.2.3 The UK considers that the text implies that cylinders are in use now that have not been sufficiently tested to allow all reject criteria to be categorised – could the Standards WG confirm this.

5.3 see comment 5.1 above.

5.3.1 (b) talks about blocked or inoperative valves. But there is no test to show if valves are blocked or not - all other industrial gas standards include a puffer test. This is a safety issue and the UK believes that the Standards WG should not be approving any standards that are not safe.

5.4.2.4 (c) The UK is unclear where the 95% of general membrane stress come from. ADR 6.2.3 calls for a maximum stress of 77% of yield. At 95% of membrane stress geometric features will yield and be damaged by the test. The UK does not believe that cylinders should be subject to any over pressure, if they are accidentally overpressurised then they can no longer be used and must be scrapped.

5.4.2.4 (d) The UK considers the wording to be very weak and it does not ensure any minimum hold time for the test – the UK suggests that the text reverts to the minimum of 30 seconds required by TC23 standards.

5.4.3.2 The UK notes that the text contains no warnings about the dangers of pneumatic testing and the need to get the agreement of the Competent Authority as required by Note 1 of ADR 6.2.1.6.1.

5.4.4 The UK does not agree that the pneumatic leak test can replace the hydraulic test required by 6.2.1.6 of ADR - full pressure testing is required.

6.1 – The UK notes that the wording implies that the valve may not be removed for periodic test - ADR requires internal examination so the UK believes that valve will always be removed.

6.2 – The UK is not clear why there is no requirement to use a thread gauge to check these threads?

9 – The UK notes that the text does not give any detailed safety precautions to be taken before scrapping a cylinder and the UK considers that the text should be amended to make sure a user of the standard understands that only a fully gas freed cylinder can be crushed, cut etc etc.

The UK considers that Annex A is invalid for ADR cylinders.

The UK considers that Annex B should show that minimum design thicknesses must always be observed.

In Annex B – the UK is unclear as to the meaning of 'severe corrosion' – could the Standards WG clarify this?

prEN1442

7.7.1.2. This does not limit the stress in the cylinder to 77% of yield at hydraulic test. The UK believes that at 90% of yield for general membrane stress at 65C will push parts of the cylinder, or areas with modest damage, well above yield on a regular basis leading to the possibilities of fatigue in the higher stressed areas.

5.6.4 The UK is not clear why there is no requirement to use thread gauges to check thread profiles.

prEN14638

The UK can find no limitation on the stress that the cylinder sees at the hydraulic test pressure. Earlier drafts of this standard limited this stress to 77% of yield at hydraulic test pressure. It is not clear to the UK why this requirement has been removed and how the cylinders will be protected in service against very modest damage that would not have been included in the fatigue testing.

EN13530

No comments

ISO14130

No comment

EN1968 A1

The UK agrees with amendment but the Standards WG needs a discussion on section 3 of this standard and the periodicity of examination allowed, which can be up to twice the interval given in P200. This is also the case for other TC23 periodic examination standards. UK has ample evidence to show that incidents do occur with cylinders and their closures when the periods set out in P200 are exceeded.

ENISO 7866

Agree with amendment.

ISO 527-5

No comment

ISO14125

No comment

ISO11114-4

The UK considers that Methods A and B are acceptable. These are proven in Europe for hydrogen problems.

However Method C is based on an ASTM approach and uses precracks in air. Since 90% of the time a crack spends is in the nucleating stage, the UK does not consider that this precrack in air approach is realistic. The UK recommends that the Standards WG does not approve the use Method C for this standard and that Method C be excluded from RID/ADR.

ISO10156-2

No comment

ISO16103

No comment

prEN14763

The UK considers that Annex A should deal with the dangers of static discharge at time of fill from fully composite cylinders. The UK notes that 6.2.1 of ADR deals with 'use' and that the filling of a cylinder is covered by the definition of 'use'.

4.4 (b) The UK considers that the text should make it clearer that all external surfaces of the cylinder must be inspected.

6.3 The UK does not believe that the text gives sufficient detail to ensure that cylinders are not overfilled.

7.2 As soon as reasonably practicable is not definite enough in a standard. Overfill can quickly lead to overstress and burst. The degree of overfill will determine how quickly the filler must react and the UK believes that this should be reflected in the text.

EN12863 A1

Acceptable amendment.

EN13365 A1

Agree amendment.

prEN14794

4.4 The UK considers that it must be clearer in the text that the full external surface of each cylinder must be inspected.

5 para 4 – The UK does not agree that this is safe practice and it should not be included in this standard. The UK considers that valve removal should be dealt with in the periodic examination standard.

6.3 The UK does not consider that the standard gives sufficient detail to ensure that cylinders are not overfilled.

7.2 As soon as reasonably practicable is not definite enough in a standard. Overfill can quickly lead to overstress and burst. The degree of overfill will determine how quickly the filler must react and the UK believes that this should be reflected in the text.

prEN14913

4.2 (e) The UK do not agree with this statement and it has no scientific grounding. The UK considers that the whole of the external surface of the cylinder must be inspected.

5 para 4 – The UK does not consider that this is a safe practice and it should not be included in this standard. The UK considers that valve removal should be dealt with in the periodic examination standard.

7.2 As soon as reasonably practicable is not definite enough in a standard. Overfill can quickly lead to overstress and burst. The degree of overfill will determine how quickly the filler must react and the UK believes that this should be reflected in the text.

EN13322-1 A1

No comments

EN14914

4 – The UK considers that there is a need to change sentence starting 'An interval of 10 years' to 'an interval of 10 years shall apply if any of the conditions in annex A are not met or if the Competent Authority has not given agreement to an extended period'.

Same comments as for prEN14795 re lighting levels for inspection.

5.1 The UK does not consider the text to be correct as it does not specify the need for an internal examination or hydraulic test as required by 6.2.1.6 of ADR.

5.3.1 talks about blocked or inoperative valves. But there is no test to show if valves are blocked or not - all other industrial gas standards include a puffer test. This is a safety issue and the UK considers that the Standards WG should not be approving any standards that are not safe.

5.3.2.4 (d) The UK is unclear where the 95% of general membrane stress come from. ADR 6.2.3 calls for a maximum stress of 77% of yield. At 95% of membrane stress geometric features will yield and be damaged by the test. The UK believes that cylinders must not be subject to any over pressure, if they are accidentally overpressurised then they can no longer be used and must be scrapped.

5.3.2.4 (e) The UK considers the wording to be very weak as it does not ensure any minimum hold time for the test – the UK suggests that the standard reverts to the minimum of 30 seconds required by TC23 standards.

5.3.2.4 Note – The UK reminds the Standards WG that repairs by welding are not allowed by 4.1.6.11 of ADR and the UK recommends that this note be remove

5.3.4 The UK notes that the text contains no warnings about the dangers of pneumatic testing and the need to get the agreement of the Competent Authority as required by Note 1 of ADR 6.2.1.6.1.

6.1 – The UK considers that the wording implies that the valve may not be removed for periodic test - ADR requires internal examination so the UK believes that the valve will always be removed.

6.2 – The UK questions why is there no requirement to use a thread gauge to check these threads?

7.1 The UK considers that it is very important to ensure that cylinders are fully dried after testing and believes that insufficient guidance is given in this draft standard on the drying of cylinders.

The UK considers that Annex B should not be included, as the Joint Meeting has already rejected this type of cylinder.

FDIS 10297

3.2 – The UK considers that valve test pressure is confusing and could be mixed up with the hydraulic test pressure. The UK believes that in the text it should be made clear that Pvt is not the hydraulic test pressure.

3.9 The UK welcomes the extension to EN849 to other forms of valve actuation, which will take away the uncertainty of the standard for use when no valve handles are specified.

6.2(d) – recent failure investigations the UK have found that compatibility testing is not fully understood by the manufacturers and the UK would suggest ‘as required’ be removed from paragraph 6.2(d)

6.3 The UK notes that the testing does not include any sample valves for compatibility testing and a lack of this testing has lead directly to a number of recent valve failures in UK.

6.8(e) The UK notes that the test pressure of $1.5 \times 1.5P_w$ is given for compressed gases, this is correct against the requirements of P200 coupled with the requirement of this standard to go to 1.5 times the hydraulic test pressure of the cylinder – but the UK questions why this is not written as $2.25 \times P_w$?

prEN 14427 A1

No comments

PrEN 14912

Section 4.4 talks about blocked or inoperative valves. But there is no test to show if valves are blocked or not - all other industrial gas standards include a puffer. This is a safety issue and the UK does not consider that the Standards WG should be approving any standards that are not safe.

4.4 Note 2 The UK believes that this is an unsafe practice that should not be encouraged in a European standard.

The UK requests that the Standards WG clarifies if the requirements of Chapter 6.2.1.6 should relate to pressure receptacles *and their closures* or just to pressure receptacles. If it does relate to their closures then clearly this standard is not fully addressing all of the requirements of periodic examination and only using 6.3 coupled with 7.1 testing should be allowed in RID/ADR.
